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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,416	08/19/2000	Antonio Lain	60002639Z31	8230

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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LEE, TOMMY D

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/642,416

Applicant(s)

LAIN ET AL.

Examiner

Thomas D. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 and 6-33 is/are allowed.
- 6) ☒ Claim(s) 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is responsive to applicant's amendment filed January 31, 2005. Claims 2-33 are pending.

### ***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,315,391 (Kanematsu).

Kanematsu discloses a method for printing an image, said method comprising: for at least each colorimetric level that will be found in rendering the image, defining plural different superpixels (noting Fig. 2, eight superpixels are defined for each of colorimetric levels 1-9 (column 5, lines 11-14)); generating or receiving data for the image (noting Fig. 1, image data originating at host 1000); rendering the image by a process that finds, for positions within the image: colorimetric levels (image data from host quantized prior to reception by print controller (column 5, lines 42-48)), and a randomized value corresponding to substantially each found colorimetric level (4-bit random number value read out from a random number sequence stored in random number storage unit (column 5, lines 60-67)); applying the randomized value to select a superpixel from the plural superpixels for each found colorimetric level (calculated remainder of selected random number value used as an index number for selecting a dot pattern from matrix storage unit 1002 (column 6, lines 1-7)); and printing the image

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using the selected superpixels (data printed by ink-jet printer (column 5, lines 42-48)); and wherein: the rendering step operates in a computational space that has: one dimension for each colorant available (first dimension corresponds to colorimetric levels); plus at least one dummy dimension which generates said randomized value (second dimension corresponds to dot matrix pattern selected from matrix storage unit 1002 randomly (column 5, line 60 – column 6, line 7)); and operation of the rendering step in the at least one dummy dimension comprises using at least one least-significant bit that: results from the rendering step in a colorant dimension, but is substantially decorrelated from the colorimetric levels found by the rendering step (dot matrix pattern selected corresponding to quantized data, based on 4-bit random number value (column 5, line 60 – column 6, lines 1-7). Because number value is random, there is no correlation between it and the colorimetric level).

***Allowable Subject Matter***

4. Claims 2-4 and 6-33 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to disclose or suggest superpixels defined for at least one colorimetric level varying in colorimetric value so as to express that colorimetric level, on average, as a nonintegral number of colorant quanta, as recited in base claim 3; or mapping a particular location in a matrix of random values to a particular position in the image, to choose a random number at said particular location in the matrix for selection of a superpixel to use at said particular position in the image, as recited in base claims 6 and 11; or the step of controlling a defining or selecting of

superpixels to impart a blue-noise property to the selected superpixels as an aggregate, as recited in base claim 25; or means for applying a randomized value, in common for all color planes, to select for each color plane a respective superpixel from plural superpixels for the found colorimetric level, as recited in base claim 29.

### ***Response to Arguments***

6. Applicant's arguments, see page 15, line 24 – page 16, line 2, of the amendment, filed August 9, 2004, with respect to the prior rejection of claim 29 under 35 U.S.C. 102(e) have been fully considered and are persuasive. The rejection of base claim 29 and dependent claims 30 and 31 has been withdrawn.

Upon further consideration, it is agreed that Kanematsu does not disclose "means for applying the randomized value, in common for all color planes, to select ... a respective superpixel." (emphasis by applicant).

7. Applicant's arguments filed in response to the prior rejection of claim 5 have been fully considered but they are not persuasive.

Applicant asserts, in the amendment filed August 9, 2004, at page 14, line 27 – page 15, line 3, that Kanematsu is not seen to teach deriving the dummy bit from the rendering step, in a colorant dimension, further stating that the cited passage in Kanematsu describes loading of the pixel value into a buffer but not then using it in generating the dummy bit. However, claim 5 does not require the pixel value to be used in the generation of the dummy bit. The claim merely requires that one least-significant bit (the dummy bit) *results from the step of rendering the image*.

Applicant asserts, at page 15, lines 4-9 of the above amendment, that Kanematsu's random number value is divided by "the number of patterns of quantized data of an identical signal level." The relevance of applicant's argument with respect to the claim language in claim 5 is unclear.

At page 15, lines 10-15, applicant further states that as disclosed in the specification, "the proposition is to use part of the ED error itself as the random bits." (emphasis by applicant). However, claim 5 fails to recite this particular feature.

Applicant further states, at page 15, lines 16-21, that "[w]hile it is true that in Kanematsu there is no correlation between the colorimetry and the decorrelation, the reason for this is the absence of causal derivation, as explained just above." However, claim 5 does not distinguish between the lack of correlation in the invention as presently claimed and the lack of correlation in Kanematsu.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (571) 272-7436. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas D. Lee  
Primary Examiner  
Art Unit 2624

tdl  
June 2, 2005